

## Claims

1. A certification system for identifying an individual person and certifying that the individual person is a right person, which is characterized by including:

5 two dimensional photo printing means for printing visible information for directly distinguishing said individual person as a two dimensional photograph;

data conversion processing means for converting said visible information into data which can be printed as a  
10 hologram or a holographic stereogram;

hologram or holographic stereogram manufacturing means for making said holograph or said holographic stereogram in accordance with said data obtained by conversion by said data conversion processing means;

15 information storage means for storing various kinds of information including at least said visible information;

information recording means for recording connection information to connect to said information storage means  
20 and read said visible information stored therein, in a designated recording member which is capable of recording various kinds of information;

certification medium manufacturing means for making a certification medium by integrating at least said  
25 recording member having said connection information recorded therein by said information recording means, said two dimensional photograph obtained by printing by said two dimensional photo printing means and said hologram or said holographic stereogram made by said  
30 hologram or holographic stereogram manufacturing means in a condition that said two dimensional photograph and said

hologram or said holographic stereogram are visible, and  
presentation means to be connected to said  
information storage means in accordance with said  
connection information which is recorded in said  
5 recording member by said information recording means and  
for receiving and presenting said visible information  
corresponding to said connection information among the  
information stored in said information storage means.

10 2. The certification system according to Claim 1,  
characterized in that said information recording means  
puts a partial area of a surface of said certification  
medium which is finally manufactured as said recording  
member and records said connection information visibly on  
15 said recording member.

3. The certification system according to Claim 1,  
characterized in that said information recording means  
puts a member whose information is readable by a  
20 designated apparatus as said recording member and records  
said connection information electromagnetically on said  
recording member.

4. The certification system according to Claim 3,  
25 characterized by including information read-out means  
functioning as said designated apparatus for reading out  
said connection information which is recorded in said  
recording member by said information recording means.

30 5. The certification system according to Claim 4,  
characterized in that:

said presentation means is a portable terminal, and  
said information read-out means is connected to said  
portable terminal.

5 6. The certification system according to Claim 3,  
characterized in that said information recording means  
generates key information as a certification key based on  
encryption for mutual certification between said  
information storage means and said presentation means and  
10 writes said key information in said recording member in  
said certification medium.

7. The certification system according to Claim 6,  
characterized in that said presentation means decodes  
15 said key information as an encrypted certification key  
and judges whether or not the key information obtained by  
decoding is valid.

8. The certification system according to Claim 1,  
20 characterized by including looks image generation means  
for generating looks image data showing looks of said  
individual person, and characterized in that said visible  
information is said looks image data generated by said  
looks image generation means.

25 9. The certification system according to Claim 8,  
characterized in that said looks image generation means  
photographs said individual person as an object to  
generate said looks image data.

30 10. The certification system according to Claim 9,

characterized in that said looks image generation means generates said looks image data by photographing two dimensional image data of said individual person.

5 11. The certification system according to Claim 9, characterized in that said looks image generation means generates said looks image data by as a plurality of pieces of two dimensional image data by photographing said individual person from a plurality of directions.

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12. The certification system according to Claim 11, characterized in that said data conversion processing means converts said looks image data comprising the plurality pieces of two dimensional image data so that  
15 the images of respective directions obtained by photographing said individual person from the plurality of directions are sequentially displayed as reproduced images of said hologram or said holographic stereogram so as to generate three dimensional image data.

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13. The certification system according to Claim 9, characterized in that said looks image generation means generates said looks image data as three dimensional image data according to parallax images by photographing  
25 said individual person from a range 360° therearound.

14. The certification system according to Claim 9, characterized in that said looks image generation means generates said looks image data as three dimensional  
30 image data according to parallax images by photographing said individual person while moving a camera used for

photographing in a linear or arc manner.

15. The certification system according to Claim 1,  
characterized in that said data conversion processing  
5 means combines designated image data to be a foreground  
and/or a background onto said visible information to  
perform processing for converting into three dimensional  
image data in which information changes in a parallax  
direction.

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16. The certification system according to Claim 1,  
characterized in that said two dimensional photo printing  
means picks up a part of image data from three  
dimensional image data generated by said data conversion  
15 processing means by converting into printable data as  
said hologram or said holographic stereogram to perform  
processing for converting the picked up data into two  
dimensional image data.

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17. The certification system according to Claim 1,  
characterized in that said visible information is a  
signature of said individual person.

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18. The certification system according to Claim 1,  
characterized in that said hologram or holographic  
stereogram manufacturing means makes said hologram or  
said holographic stereogram which is capable of  
expressing a parallax of any one direction of a  
horizontal direction or a vertical direction, or both of  
30 the horizontal and vertical directions.

19. The certification system according to Claim 1,  
characterized in that:

    said information recording means records said  
visible information in said recording member together  
5 with said connection information,

    said certification medium manufacturing means  
integrates, at least, said recording member in which said  
connection information and said visible information is  
recorded by said information recording means, said two  
10 dimensional photograph, and said hologram or said  
holographic stereogram and makes the certification medium  
in a condition that said two dimensional photograph and  
said hologram or said holographic stereogram are visible,  
and

15      said presentation means reads out and presents said  
visible information recorded in said recoding member by  
said information recording means while presenting said  
visible information received from said information  
storage means in accordance with said connection  
20 information recorded in said recoding member.

20. A certification method for performing certification  
to determine if an individual person is a right person,  
which is characterized by including:

25      a two dimensional photo printing step for printing  
visible information to directly distinguish said  
individual person as a two dimensional photograph;

    a data conversion processing step for converting  
said visible information into data which can be printed  
30 as a hologram or a holographic stereogram;

    a hologram or holographic stereogram manufacturing

step for making said hologram or said holographic stereogram in accordance with said data obtained by conversion in said data conversion processing step;

an information storage step for storing various  
5 kinds of information including at least said visible information into designated information storage means;

an information recording step for recording in a designated recording member which is capable of recording various kinds of information the connection information  
10 for reading said stored visible information by connecting to said information storage means;

a certification medium manufacturing step for making a certification medium by integrating at least said recording member in which said connection information is  
15 recorded in said information recording step, said two dimensional photograph which is obtained by printing in said two dimensional photo printing step, and said hologram or said holographic stereogram which is obtained in said hologram or holographic stereogram manufacturing  
20 step in a condition that said two dimensional photograph and said hologram or said holographic stereogram are visible; and

a presentation step for connecting to said information storage means in accordance with said  
25 connection information which is recorded in said recording member in said information recording step and receiving for presentation said visible information which corresponds to said connection information among information stored in said information storage means.

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21. The certification method according to Claim 20,

characterized in that:

in said information recording step, said visible information is recorded in said recording member together with said connection information,

5 in said certification medium manufacturing step, at least said recording member in which said connection information and said visible information is recorded by said information recording means, said two dimensional photograph, and said hologram or said holographic  
10 stereogram in accordance with the visible information are integrated so that the certification medium is made in a condition that said two dimensional photograph and said hologram or said holographic stereogram are visible, and

in said presentation step, said visible information  
15 recorded in said recoding member by said information recording means is read out and presented while said visible information received from said information storage means in accordance with said connection information recorded in said recoding member is presented.

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22. A certification system for performing certification to determine if an individual person is a right person, which is characterized by including:

two dimensional photo printing means for printing  
25 visible information directly distinguishing said individual person as a two dimensional photograph;

data conversion processing means for converting said visible information into data which can be printed as a hologram or a holographic stereogram;

30 hologram or holographic stereogram manufacturing means for making said hologram or said holographic



stereogram in accordance with said data obtained by  
conversion by said data conversion processing means;

information recording means for recording said  
visible information in a designated recording member  
5 which is capable of recording various kinds of  
information;

certification medium manufacturing means for making  
a certification medium by integrating at least said  
recording member in which said visible information is  
10 recorded by said information recording means, said two  
dimensional photograph which is obtained by printing by  
said two dimensional photo printing means, and said  
hologram or said holographic stereogram made by said  
hologram or holographic stereogram manufacturing means in  
15 a condition that said two dimensional photograph and said  
hologram or said holographic stereogram are visible; and  
presentation means for reading and presenting said  
visible information which is recorded in said recording  
member by said information recording means.

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23. The certification system according to Claim 22,  
characterized in by including information storage means  
for storing various kinds of information including at  
least said visible information.

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24. The certification system according to Claim 22,  
characterized in that said information recording means  
puts a member whose information is readable by a  
designated apparatus as said recording member and records  
30 said visible information electromagnetically on said  
recording member.

25. The certification system according to Claim 24,  
characterized by including information read-out means  
functioning as said designated apparatus for reading out  
5 said visible information which is recorded in said  
recording member by said information recording means.

26. The certification system according to Claim 25,  
characterized in that:  
10       said presentation means is a portable terminal, and  
      said information read-out means is connected to said  
portable terminal.

27. The certification system according to Claim 24,  
15 characterized in that said information recording means  
performs a designated conversion processing for making  
said visible information suitable to be recorded in said  
recording member.

20 28. The certification system according to Claim 24,  
characterized in that said information recording means  
picks up a part of or all image data from three  
dimensional image data generated by said data conversion  
processing means by converting into printable data as  
25 said hologram or said holographic stereogram to record  
the picked up data in said recording member as said  
visible information.

29. The certification system according to Claim 24,  
30 characterized in that said information recording means  
generates key information as a certification key based on

encryption for performing certification of said certification medium by said presentation means and writes said key information in said recording member in said certification medium.

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30. The certification system according to Claim 29, characterized in that said presentation means decodes said key information as an encrypted certification key and judges whether or not the key information obtained by  
10 decoding is valid.

31. The certification system according to Claim 24, characterized in that said information recoding means generates an encryption key and a decoding key for  
15 encrypting and decoding said visible information and encrypts said visible information using said encryption key to record the information in said recording member.

32. The certification system according to Claim 31,  
20 characterized in that said presentation means decodes said encrypted visible information using said decoding key to present said visible information obtained by the decoding.

25 33. The certification system according to Claim 22, characterized by including looks image generation means for generating looks image data showing looks of said individual person, and characterized in that said visible information is said looks image data generated by said  
30 looks image generation means.

34. The certification system according to Claim 33, characterized in that said looks image generation means photographs said individual person as an object to generate said looks image data.

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35. The certification system according to Claim 34, characterized in that said looks image generation means generates said looks image data by photographing two dimensional image data of said individual person.

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36. The certification system according to Claim 34, characterized in that said looks image generation means generates said looks image data by as a plurality of pieces of two dimensional image data by photographing  
15 said individual person from a plurality of directions.

37. The certification system according to Claim 36, characterized in that said data conversion processing means converts said looks image data comprising the  
20 plurality pieces of two dimensional image data so that the images of respective directions obtained by photographing said individual person from the plurality of directions are sequentially displayed as reproduced images of said hologram or said holographic stereogram so  
25 as to generate three dimensional image data.

38. The certification system according to Claim 34, characterized in that said looks image generation means generates said looks image data as three dimensional  
30 image data according to parallax images by photographing said individual person from a range 360° therearound.

39. The certification system according to Claim 34,  
characterized in that said looks image generation means  
generates said looks image data as three dimensional  
5 image data according to parallax images by photographing  
said individual person while moving a camera used for  
photographing in a linear or arc manner.

40. The certification system according to Claim 22,  
10 characterized in that said data conversion processing  
means combines designated image data to be a foreground  
and/or a background onto said visible information to  
perform processing for converting into three dimensional  
image data in which information changes in a parallax  
15 direction.

41. The certification system according to Claim 22,  
characterized in that said two dimensional photo printing  
means picks up a part of image data from three  
20 dimensional image data generated by said data conversion  
processing means by converting into printable data as  
said hologram or said holographic stereogram to perform  
processing for converting the picked up data into two  
dimensional image data.

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42. The certification system according to Claim 22,  
characterized in that said visible information is a  
signature of said individual person.

30 43. The certification system according to Claim 22,  
characterized in that said hologram or holographic

stereogram manufacturing means makes said hologram or  
said holographic stereogram which is capable of  
expressing a parallax of any one direction of a  
horizontal direction or a vertical direction, or both of  
5 the horizontal and vertical directions.

44. A certification method for identifying an individual  
person and certifying if the individual person is a right  
person, which is characterized by including:

10 a two dimensional photo printing step for printing  
visible information which directly distinguishing said  
individual person as a two dimensional photograph;

a data conversion processing step for converting  
said visible information into data which can be printed  
15 as a hologram or a holographic stereogram;

a hologram or holographic stereogram manufacturing  
step for making said hologram or said holographic  
stereogram in accordance with said data which is obtained  
by the conversion in said data conversion processing  
20 step;

an information recording step for recording said  
visible information in a designated recording member in  
which various kinds of information can be recorded;

a certification medium manufacturing step for making  
25 a certification medium by integrating at least said  
recording member in which said visible information is  
recorded in said information recording step, said two  
dimensional photograph which is obtained by printing in  
said two dimensional photo printing step, and said  
30 hologram or said holographic stereogram made in said  
hologram or holographic stereogram manufacturing step in

a condition that said two dimensional photograph and said hologram or said holographic stereogram are visible; and

a presentation step for reading and presenting said visible information which is recorded in said recording member in said information recording step.

45. A certification medium manufacturing apparatus for making a certification medium to be used in a certification system for performing certification if an individual person is a right person, said certification medium manufacturing apparatus is characterized by including:

two dimensional photo printing means for printing visible information which directly distinguishes said individual person as a two dimensional photograph;

data conversion processing means for converting said visible information into data which can be printed as a hologram or a holographic stereogram;

hologram or holographic stereogram manufacturing means for making said hologram or said holographic stereogram in accordance with said data which is obtained by conversion by said data conversion processing means;

information storage means for storing various kinds of information including at least said visible information;

information recording means for recording a connection information to connect to said information storage means to read said stored visible information; and

certification medium manufacturing means for making a certification medium by integrating at least said

recording member in which said connection information is recorded by the information recording means, said two dimensional photograph which is obtained by printing by said two dimensional photo printing means, and said  
5 hologram or said holographic stereogram made by said hologram or holographic stereogram manufacturing means in a condition that said two dimensional photograph and said hologram or said holographic stereogram are visible.

10 46. The certification medium manufacturing apparatus according to Claim 45, characterized in that said information recording means puts a partial area of a surface of said certification medium which is finally manufactured as said recording member and records said  
15 connection information visibly on said recording member.

47. The certification medium manufacturing apparatus according to Claim 45, characterized in that said information recording means puts a member whose  
20 information is readable by a designated apparatus as said recording member and records said connection information electromagnetically on said recording member.

48. The certification medium manufacturing apparatus  
25 according to Claim 45, characterized by including looks image generation means for generating looks image data showing looks of said individual person, and characterized in that said visible information is said looks image data generated by said looks image generation  
30 means.



49. The certification medium manufacturing apparatus according to Claim 48, characterized in that said looks image generation means photographs said individual person as an object to generate said looks image data.

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50. The certification medium manufacturing apparatus according to Claim 45, characterized in that said two dimensional photo printing means picks up a part of image data from three dimensional image data generated by said data conversion processing means by converting into printable data as said hologram or said holographic stereogram to perform processing for converting the picked up data into two dimensional image data.

15 51. The certification system according to Claim 45, characterized in that:

said information recording means records said visible information in said recording member together with said connection information, and

20 said certification medium manufacturing means integrates, at least, said recording member in which said connection information and said visible information is recorded by said information recording means, said two dimensional photograph, and said hologram or said holographic stereogram and makes the certification medium in a condition that said two dimensional photograph and said hologram or said holographic stereogram are visible.

52. A certification terminal device for certifying an individual person and certifying that the individual person is a right person by using a certification medium

made by a certification medium manufacturing apparatus comprising two dimensional photo printing means for printing as a two dimensional photograph visible information which directly distinguishes said individual  
5 person, data conversion processing means for converting said visible information into data which can be printed as a hologram or a holographic stereogram, hologram or holographic stereogram manufacturing means for making said hologram or said holographic stereogram in  
10 accordance with said data which is obtained by conversion by said data conversion processing means, information storage means for storing various kinds of information including at least said visible information, information recording means for recording connection information to  
15 connect to said information storage means and read said stored visible information, in a designated recording member which can record various kinds of information, and certification medium manufacturing means for making the certification medium by integrating at least said  
20 recording member in which said connection information is recorded by said information recording means, said two dimensional photograph which is obtained by printing by said two dimension photo printing means and said hologram or said holographic stereogram made by said hologram or  
25 holographic stereogram manufacturing means in a condition that said two dimensional photograph and said hologram or said holographic stereogram are visible, said certification terminal device characterized by including:  
information read-out means for reading out  
30 connection information which is recorded in said recording member by said information recording means; and

presentation means for connecting to said  
information storage means in accordance with said  
connection information which is recorded in said  
recording member by said information recording means for  
5 receiving and presenting said visible information  
corresponding to said connection information among said  
information stored in said information storage means.

53. The certification terminal device according to Claim  
10 52, characterized in that:

said presentation means is a portable terminal, and  
said information read-out means is connected to said  
portable terminal.

15 54. The certification terminal device according to Claim  
52, characterized in that:

said information recording means records said  
visible information in said recording member together  
with said connection information,

20 said certification medium manufacturing means  
integrates, at least, said recording member in which said  
connection information and said visible information is  
recorded by said information recording means, said two  
dimensional photograph, and said hologram or said  
25 holographic stereogram and makes the certification medium  
in a condition that said two dimensional photograph and  
said hologram or said holographic stereogram are visible,  
and

said presentation means reads out and presents said  
30 visible information recorded in said recording member by  
said information recording means while presenting said

visible information received from said information storage means in accordance with said connection information recorded in said recoding member.

5 55. A certification medium manufacturing apparatus for making a certification medium which is used in a certification system for identifying an individual person and certifying if the individual person is a right person, said certification medium manufacturing apparatus  
10 characterized by including:

two dimensional photo printing means for printing visible information which directly distinguishes said individual person as a two dimensional photograph;

data conversion processing means for converting said  
15 visible information into data which can be printed as a hologram or a holographic stereogram;

hologram or holographic stereogram manufacturing means for making said hologram or said holographic stereogram in accordance with said data which is obtained  
20 by conversion by said data conversion means;

information recording means for recording said visible information in a designated recording member which can record various kinds of information; and

certification medium manufacturing means for making  
25 the certification medium by integrating at least said recording member in which said visible information is recorded by said information recording means, said two dimensional photograph which is obtained by printing by said two dimensional photo printing means, and said  
30 hologram or said holographic stereogram made by said hologram or holographic stereogram manufacturing means

in a condition that said two dimensional photograph and said hologram or said holographic stereogram are visible.

56. The certification medium manufacturing apparatus  
5 according to Claim 55, characterized by including information storage means for storing various kinds of information including at least said visible information.

57. The certification medium manufacturing apparatus  
10 according to Claim 55, characterized in that said information recording means puts a member whose information is readable by a designated apparatus as said recording member and records said connection information electromagnetically on said recording member.

15 58. The certification medium manufacturing apparatus according to Claim 55, characterized in that said information recording means picks up a part of or all image data from three dimensional image data generated by  
20 said data conversion processing means by converting into printable data as said hologram or said holographic stereogram to record the picked up data in said recording member as said visible information.

25 59. The certification medium manufacturing apparatus according to Claim 55, characterized by including looks image generation means for generating looks image data showing looks of said individual person, and characterized in that said visible information is said  
30 looks image data generated by said looks image generation means.

60. The certification medium manufacturing apparatus according to Claim 59, characterized in that said looks image generation means photographs said individual person as an object to generate said looks image data.

61. The certification medium manufacturing apparatus according to Claim 55, characterized in that said two dimensional photo printing means picks up a part of image data from three dimensional image data generated by said data conversion processing means by converting into printable data as said hologram or said holographic stereogram to perform processing for converting the picked up data into two dimensional image data.

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62. A certification terminal device for identifying an individual person and certifying that the individual person is a right person by using a certification medium made by a certification medium manufacturing apparatus comprising two dimensional photo printing means for printing visible information which directly distinguishes said individual person as a two dimensional photograph, data conversion processing means for converting said visible information into data which can print as a hologram or a holographic stereogram, hologram or holographic stereogram manufacturing means for making said hologram or said holographic stereogram in accordance with said data which is obtained by conversion by said data conversion processing means, information recording means for recording said visible information in a designated recording member which can record various

kinds of information, certification medium manufacturing means for making the certification medium by integrating at least said recording member in which said visible information is recorded by said information recording means, said two dimensional photograph which is obtained by printing by said two dimensional photo printing means, and said hologram or said holographic stereogram made by said hologram or holographic stereogram manufacturing means in a condition that said two dimensional photograph and said hologram or said holographic stereogram are visible, said certification terminal device characterized by including:

information read-out means for reading out said visible information which is recorded in said recording member by said information recording means; and

presentation means for presenting said visible information which is read out of said recording member by said information read-out means.

63. The certification terminal device according to Claim 62, characterized in that:

said presentation means is a portable terminal, and  
said information read-out means is connected to said portable terminal.